IN THE CLAIMS

Please amend the claims as set forth below. Please amend

claims 32 and 33 as set forth below:

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Claims 1-23 (canceled)

Claim 24 (Allowed) A chemical detection system for detecting the presence of at least one chemical consisting essentially of at least one freely moving organism trained to display a recordable response behavior to at least one chemical, at least one detection chamber housing said organism, a sensor means for detecting a response by a trained organism, an air system for drawing an air sample for chemical detection into the chamber and over a freely moving trained organism, and a data analysis system operatively connected to said sensor means.

Claim 25. (Allowed) The system of claim 24 wherein said organism is an invertebrate.

Claim 26. (Allowed) The system of claim 25 wherein said invertebrate is an insect.

Claim 27. (Allowed) The system of claim 24 wherein said sensor is an electronic sensor.

Claim 28. (Allowed) The system of claim 24 wherein said system

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contains multiple detection chambers for determining per cent response to a single chemical or for determining the presence of multiple chemicals.

Claim 29. (Allowed)   A method for detecting the presence of at least one chemical consisting essentially of:

    (a) placing at least one organism trained to detect at least one chemical into at least one chamber wherein said one chamber includes a compartment for said organism, a sample compartment, a divider with an opening wherein said divider contains a sensor and a data analysis system for reporting said response wherein said analysis system is operatively connected to said sensor and said divider is located between said organism compartment and said sample compartment,

    (b) introducing a sample of air into said sample compartment and drawing it through said opening in said divider into the organism compartment, and

    (c) recording a response behavior of said at least one organism to determine the presence of said chemical.

Claim 30. (Allowed)   The method of claim 29 wherein said trained

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organism is an invertebrate.

Claim 31.   (Allowed)   The method of claim 30 wherein said

invertebrate is an insect.

Claim 32. (newly amended)   A method for training organisms to

detect at least one chemical consisting essentially of:

   (a)   presenting a freely moving organism in the immediate

         presence of a biological resource,

   (b)   drawing air from around a target chemical over said

         organism ~~after it~~ until it displays a response

         behavior to said resource,

   (c)   removing said organism from said biological resource

         after it displays a response behavior to said

         resource, and

   (d)   repeating steps (a)-(C) at least about two times in

         the immediate presence of the biological resource to

         obtain a trained organism which displays behavior to a

         target chemical without the presence of a biological

         resource.

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Claim 33. (newly amended) The method of claim 32 wherein ~~in~~ said
biological resource is selected from the group consisting of
food, host, mate, and prey.

Claim 34. (Allowed) A chemical detection system for detecting
the presence of at least one chemical comprising:

   (a)   a means for introducing a sample of air from an area
         suspected of containing a chemical into at least one
         detector chamber,

   (b)   at least one detector chamber containing an organism
         trained to detect a chemical wherein said chamber is
         operatively connected to said means for introducing a
         sample of air,

   (c)   a power source operatively connected to said means for
         introducing a sample of air,

   (d)   a sensor means for detecting a response by an organism
         trained to detect said chemical in a sample of sir
         wherein said organism is in said detector chamber, and

   (e)   a data analysis system operatively connected to said
         sensor.

Claim 35. (Allowed) The system of claim 34 wherein said means

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for introducing a sample of air into at least one detector

chamber includes an air pump, a flow control valve, and a meter.

Claim 36. (Allowed) The system of claim 34 wherein said sensor

means for detecting a response is selected from the group

consisting of an infrared sensor, a visible light sensor, and a

laser sensor.

Claim 37. (Allowed) A method for detecting the presence of at

least one chemical comprising:

   (a)   placing at least one organism trained to detect a

         chemical into a chamber comprising a compartment for

         said organism, a sample compartment, a divider

         containing a sensor and a data analysis system for

         reporting a response wherein said analysis system is

         operatively connected to said sensor and said divider

         has an opening wherein said divider is located between

         said organism compartment and said sample compartment,

   (b)   introducing a sample of air into said sample

         compartment and drawing it through said opening in the

         divider into the organism compartment, and

   (c)   recording a response behavior of said at least one

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organism to determine the presence of said chemical.

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